

A new species of the *Macrophya flavomaculata* group (Hymenoptera: Tenthredinidae) from China

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Abstract: A new species of the *Macrophya flavomaculata* group is described from Tibet in China: *M. transmaculata* Li, Liu & Wei sp. nov.

Key words: Symphyta, Tenthredinoidea, taxonomy

中国钩瓣叶蜂属黄斑钩瓣叶蜂种团一新种（膜翅目：叶蜂科）

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摘要：记述中国西藏钩瓣叶蜂属黄斑钩瓣叶蜂种团 *Macrophya flavomaculata* group 1 新种：横斑钩瓣叶蜂 *M. transmaculata* Li, Liu & Wei sp. nov.。

关键词：广腰亚目；叶蜂总科；分类

Introduction

Macrophya Dahlbom, 1835, the third largest genus in the subfamily Tenthredininae (Hymenoptera: Tenthredinidae) contains 288 species worldwide (Li & Wei 2013; Li *et al.* 2013a, b, c, 2014a, b, 2016a, b, 2017a, b; Liu *et al.* 2015a, b, 2016a, b, 2017a, b; Shinohara 2015; Shinohara & Li 2015; Shinohara & Yoshida 2015; Taeger *et al.* 2010; Wei *et al.* 2006, 2013). In China, 149 *Macrophya* species have been recorded (Li *et al.* 2012, 2013a, b, c, 2014a, b, 2016a, b, 2017a, b; Li & Wei 2012, 2013; Liu *et al.* 2015a, b, 2016a, b, 2017a, b; Taeger *et al.* 2010; Wei *et al.* 2006, 2013; Wu *et al.* 2012; Zhang & Wei 2006; Zhao *et al.* 2010a, b; Zhao & Wei 2011; Zhu & Wei 2009; Zhu *et al.* 2012).

The *M. flavomaculata* group is a medium-sized group of *Macrophya*, including 13 species and 2 subspecies occurring all over the world. They are *M. acuminiclypeus* Zhang & Wei, 2006 from China, *M. coloritibialis* Li, Liu & Wei, 2016 from China, *M. falsifica* Mocsáry, 1909 from Japan, *M. flavomaculata* (Cameron, 1876) from China, *M. fraxina* Zhou & Huang, 1980 from China, *M. khasiana* Saini, Bharti & Singh, 1996 from India, *M. manganensis* Saini,

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Bharti & Singh, 1996 from India, *M. parviserrula* Chen & Wei, 2005 from China, *M. quadriclypeata* Wei & Nie, 2002 from China, *M. satoi* Shinohara & Li, 2015 from Japan, *M. verticalis* Konow, 1898 from China, North Burma and North Vietnam (including *M. v. verticalis* Konow, 1898 from North Vietnam and *M. v. tonkinensis* Malaise, 1945 from China and North Burma), *M. zhengi* Wei, 1997 from China and *M. zhui* Li, Liu & Wei, 2016 from China (Cameron 1876; Konow 1898; Mocsáry 1909; Forsius 1925; Malaise 1945; Zhou & Huang 1980; Saini, Bharti & Singh 1996; Wei 1997; Wei & Nie 2002; Chen *et al.* 2005; Zhang & Wei 2006; Liu *et al.* 2016b). Eight species of this group are reported in China.

In this study, one species of this group from Tibet in China is described as new to science.

Material and methods

The specimens were examined with a Motic-SMZ-168 stereomicroscope. Adult images were taken with a Nikon D700 digital camera and the series of images montaged using Helicon Focus (©HeliconSoft). All images were further processed with Adobe Photoshop CS 11.0®.

Morphological descriptions of this new species are based on the holotype. The terminology of genitalia follows Ross (1945) and the general morphology follows Viitasaari (2002), although for a few terms (e.g. middle fovea and lateral fovea), we follow Takeuchi (1952).

The specimens examined in this study, including the holotype and paratypes of this new species, are deposited in the Insect Collection of Central South University of Forestry and Technology, Changsha, Hunan, China (CSCS).

Taxonomy

The *flavomaculata*-group

Diagnosis is provided by Liu *et al.* (2016b).

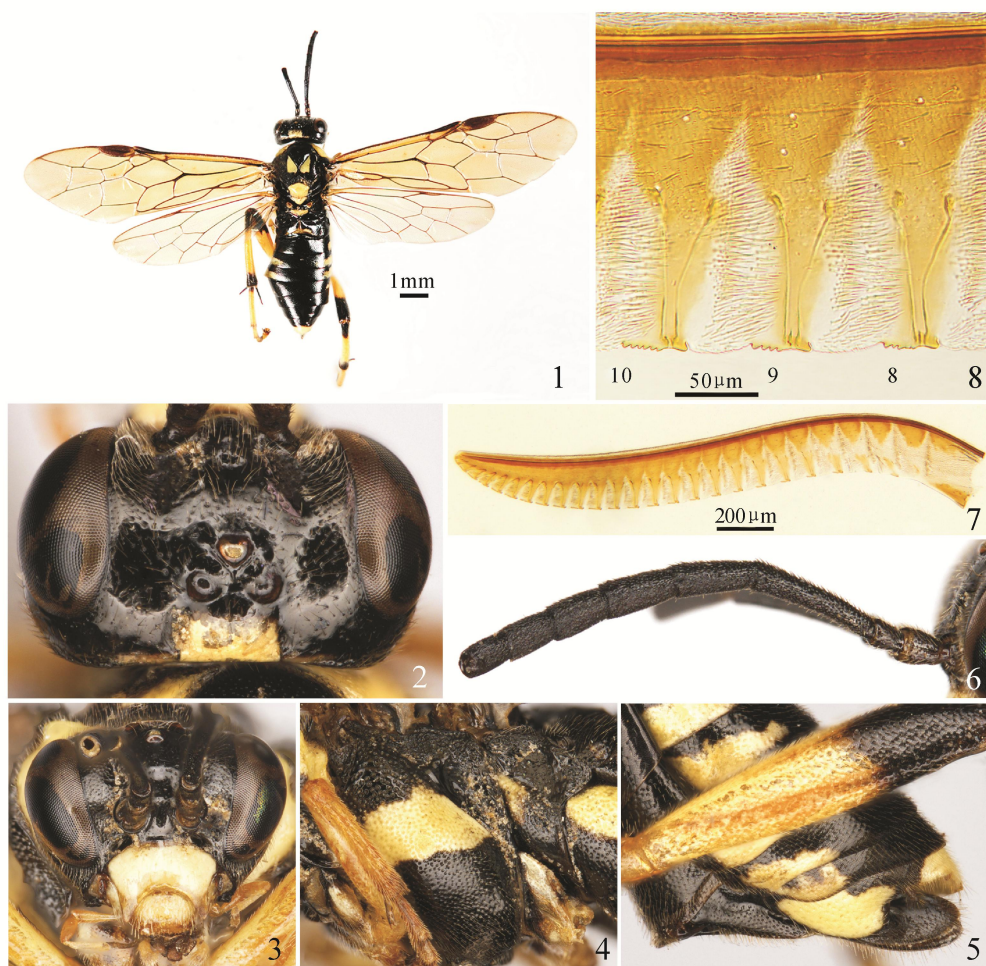
Macrophya transmaculata Li, Liu & Wei sp. nov. (Figs. 1–8)

Female. Body length 8–8.5 mm. Body largely black; following parts yellow: palp, basal half of mandibles, labrum, clypeus, postocellar area and two lateral sides with narrow cross maculae, large maculae on posterior corners of pronotum and lateral corners, two long triangular maculae on inner sides of parapsis, mesoscutellum, mesoscutellar appendage, metascutellum, a large broad cross macula in center of mesepisternum, posterior margin of metepisternum with a small macula, fore and middle legs except bases of coxae with black maculae, an oval macula on outer side of hind coxa, hind trochanter entirely, basal 2/3 of hind femur, broad ring as long as 2/3 times hind tibia, hind tarsi except every tarsus with black maculae at base, long cross maculae in posterior margins of abdominal tergum 1, two lateral sides with long maculae of abdominal terga 2–8 (the longest maculae of abdominal tergum 3), two lateral sides with large maculae of abdominal tergum 9 and abdominal tergum 10; cenchri pale yellowish brown. Body hairs silver; setae on sheath slightly curved, pale yellow. Wings hyaline, without smoky macula, stigma and veins blackish brown (Fig. 1).

Dorsum of head strongly shiny; frons sparsely punctured, without microsculpture, interspaces between punctures smooth (Fig. 2); labrum and clypeus shiny, labrum without distinct puncture or microsculpture, clypeus with some large punctures, microsculpture fine. Thorax shiny, punctures on mesonotum more than punctures on head, interspaces between punctures smooth, without microsculpture; mesoscutellum strongly shiny, peak without puncture, all round parts with some large punctures; mesoscutellar appendage slightly shiny, with some shallow punctures; metascutellum slightly dull, without distinct punctures, but with weak microsculpture. Mesopleuron less shiny, mesepisternum with dense punctures slightly, upper 1/3 with large punctures, interspaces between punctures broad; lower 2/3 with minute and more punctures, interspaces between punctures broad; anepimeron dull, with coarse wrinkles; anterior 1/3 of katepimeron smooth and shiny, without puncture or microsculpture, posterior 2/3 of katepimeron with large and coarse punctures and microsculpture; metepisternum dull, with slightly dense and minute punctures, microsculpture fine; metepimeron less shiny, center parts with weak microsculpture and punctures, dorsal margins and posterior corner largely with distinct microsculpture (Fig. 4). All abdominal terga slightly shiny, two lateral sides of abdominal tergum 1 with large shallow punctures, microsculpture fine, central parts of abdominal tergum 1 nearly smooth; other abdominal terga with minute and shallow punctures, microsculpture weak. Hind coxa with slightly dense and coarse punctures, interspaces between punctures with fine microsculpture. Surface of sheath coriaceous, with indistinct punctures and fine microsculpture. Labrum elevated, anterior margin of labrum truncate; clypeus clearly elevated, base broader than distance between lower corners of eyes; lateral sides distinctly convergent forward, anterior margin shallowly incised to approximately 1/2 length of clypeus, lateral corners long and narrow, lobe margin acute (Fig. 3); malar space 0.7 times as broad as diameter of middle ocellus; frons weakly elevated, as high as top of eyes in lateral view; middle fovea clear, broad and round; lateral foveae slightly deep, broad furrow-like; interocellar furrow distinct, postocellar furrow indistinct; POL : OOL : OCL = 4 : 11 : 8; postocellar area slightly elevated, 2 times broader than long; anterior parts of lateral furrow 2/3 broad and deep, posterior parts 1/3 weak, divergent backwards; head narrowed behind eyes in dorsal view, occipital carina complete. Antenna not slender, as long as head and thorax together, shorter than abdomen clearly (2 : 3); antennomere 2, 0.8 times as long as breadth (9 : 11), antennomere 3, 1.64 times as long as antennomere 4 (18 : 11), about 0.86 times as long as antennomeres 4 and 5 together (18 : 21), middle antennomeres not inflated, subapical antennomeres weakly compressed, the ratio of antennomeres 4–9 = 18 : 11 : 10 : 8 : 7 : 7 (Fig. 6). Median mesoscutal groove clear, notaulus deep. Mesoscutellum roundly elevated, without carina and peak, as high as top of mesonotum in lateral view; anterior half of mesoscutellar appendage with broad and obtuse middle carina, posterior half without carina; metascutellum with short and lower carina; dorsal-posterior platform of mesepimeron about 0.5 times as broad as diameter of middle ocellus; metepimeron without appendage; distance between cenchri 2.6 times breadth of a cenchrus; mesopleuron and metapleuron as shown in Fig 4. Inner tibial spur of hind leg 0.52 times the length of hind tarsomere 1 (27 : 52), hind tarsomere 1 slightly slender, about 1.73 times longer than following 4 tarsomeres together (52 : 30); claw with inner tooth slightly broader and equal to outer tooth. Ovipositor sheath about 1.32 times longer than hind tarsomere 1 (25 : 19), apical sheath slightly shorter than basal sheath (23 : 24), setae on sheath slightly curved in dorsal view, apical margin round in lateral

view (Fig. 5). Fore wing with crossvein cu-a joining cell 1M at basal 1/3, crossvein 2r joining cell 2Rs at apical 2/5, crossvein 3r-m slightly oblique and curved, cell 2Rs slightly longer than cell 1R₁, anal cell with a long petiole, 0.6 times longer than crossvein 1r-m; petiole of anal cell in hind wing about 0.5 times longer than crossvein cu-a, crossvein cu-a oblique. Lancet with 24 serrulae (Fig. 7), lancet slightly flat, middle serrulae each with 1 proximal and 4–6 distal teeth, subbasal teeth clear and small, annular spine bands broad, cypsela slightly broader than middle serrulae, the 8th–10th serrulae at basal as in Fig. 8.

Male. Unknown.



Figures 1–8. *Macrophya transmaculata* Li, Liu & Wei sp. nov., ♀, holotype. 1. Female adult, dorsal view; 2. Head of female, dorsal view; 3. Head of female, anterior view; 4. Mesopleuron and metapleuron of female; 5. Ovipositor sheath, dorsal view; 6. Antenna of female; 7. Lancet; 8. 8th–10th middle serrulae.

Holotype. ♀, **China**, Tibet, Changdu District, Chayu County, E. 97.3345°, N. 28.6234°, alt. 2028 m, 07-VII-2013, Ping HU & Yihai ZHONG leg. **Paratypes.** 2♀, same data as holotype.

Etymology. The species epithet “*transmaculata*” is derived from the two Latin words

“*trans*” and “*macula*” referring to center of the mesepisternum having a large cross macula.

Remarks. In this group, this new species is small, body length 8–8.5 mm; center of the mesepisternum with a large cross macula; basal 2/3 of hind femur yellow, apical 1/3 black; broad ring 2/3 times longer than hind tibia; hind tarsi largely yellow, but base of hind tarsomere 1 with black macula; serrulae of lancet flat, middle serrulae each with 1 proximal and 4–6 distal teeth, *etc.* It is easily identified by these characters.

Distribution. China (Tibet).

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